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# THE EFFECTIVENESS OF PREFERENTIAL TRADE LIBERALIZATION IN CENTRAL AND EASTERN EUROPE

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# **The Effectiveness of Preferential Trade Liberalization in Central and Eastern Europe**

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## **Abstract**

After the collapse of communism in Central and Eastern Europe (CEE) many countries in the region radically liberalized their foreign trade regimes in the 1990s. In particular preferential trade liberalization in the CEE countries has been promoted by the European Union in the form of the association agreements that involved “vertical” trade liberalization between the EU and countries in Central and Eastern Europe. In addition to this the CEE countries liberalized trade “horizontally” among themselves in the form of sub-regional and bilateral free trade agreements. In this paper, we use the generalized gravity equation estimated on bilateral trade data for ten CEE countries during the period of 1993-2004 to evaluate the effectiveness of preferential trade liberalization in Central and Eastern Europe. We find that all forms of preferential trade liberalization positively contributed to the expansion of trade of the CEE countries but their impact was country specific.

## **Keywords:**

bilateral trade, gravity equation, preferential trade liberalization

## **JEL:**

F13, F15, P33

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## **I. Introduction**

Preferential trade liberalization has become a major feature of the global trading system during the past fifty years. The limited ability to achieve far reaching multilateral trade liberalization under the auspices of the General Agreement on Tariffs and Trade (GATT) and later the World Trade Organization (WTO) has led to the proliferation of regional trade agreements (RTAs) in the world economy. Following WTO terminology, the term regional trade agreement encompasses reciprocal bilateral free trade areas (FTAs) and customs unions (CUs) as well as multicountry agreements.<sup>1</sup>

The first wave of regionalism was triggered by a group of Western European countries following the 1957 Treaty of Rome establishing the customs union that later evolved into the European Union (EU) and created a network of preferential trade agreements with other partners. In the 1990s the EU played also an active role in sponsoring trade liberalization in Central and Eastern European (CEE) countries that during the communist rule remained isolated from the rest of the world for almost fifty years.

The bilateral association agreements (the so-called Europe Agreements) concluded between particular CEE countries and the EU were intended to support their economic reforms and prepare them for eventual EU membership. These efforts culminated in two subsequent waves of enlargement to the East in 2004 and 2007. In addition to trade liberalization with Western Europe, CEE countries liberalized trade among themselves by creating a matrix of bilateral and sub-regional free trade agreements.

The theoretical literature does not offer clear predictions concerning the effectiveness of various forms of preferential trade liberalization. On the one hand, it is argued that accession to the multi-country agreement should be more effective than the creation of a bilateral trade agreement. This may be due to the fact that in the former case trade liberalization often takes the form of a “take-it-or-leave-it” offer while in the latter case tariff formation may be subject to lobbying of

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<sup>1</sup> In a free trade area all members eliminate barriers to trade in goods among themselves, but each member retains the right to maintain different barriers on non-members, while a customs union goes beyond a FTA by establishing a common external tariff on all trade between members and non-members.

organized groups of interest seeking for protection (for instance Grossman and Helpman, 1994). On the other hand, it is argued that bilateral trade agreements are easier to negotiate as fewer partners are involved in the negotiations. Therefore, this paper attempts to verify empirically whether institutionalized trade liberalization is more effective compared to trade liberalization on the bilateral basis.

In this paper a generalized gravity model is used to study the trade effects of the EU-sponsored trade liberalization in the CEE countries as well as the effects of preferential trade liberalization among themselves. In contrast to previous studies it is found that both the Europe Agreements and various sub-regional and bilateral trade agreements were effective in promoting trade of the CEE countries.

Two main strands in the empirical literature employing the gravity models in the context of Central and Eastern European countries can be distinguished. The first strand that emerged in the early 1990s concentrated on estimating the trade potential of CEE countries and predicting the volume of their trade flows with the West. The most commonly cited examples that belong to this strand include Wang and Winters (1991), Hamilton and Winters (1992), Baldwin (1994), Gross and Gonciarz (1996), and Piazzolo (1997).<sup>2</sup>

The second strand that emerged in the late 1990s and early 2000s focuses on evaluating the ex-post effectiveness of trade liberalization in Central and Eastern Europe. However, most studies that belong to the second genre take into account only the trade effects of the Europe Agreements and almost completely neglect the intra-CEE agreements concluded by particular countries in the region. This in turn may lead to the biased estimates of the parameters on the variables capturing the effects of the EU association agreements. The two notable exceptions include studies by Adam *et al.* (2003) and De Benedictis *et al.* (2005).

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<sup>2</sup> These studies find that initially high unexploited trading potential of Central and Eastern Europe quickly eroded as a result of adjustment in trade flows that took place in the early 1990s. See Brenton and Manzonchi (2002) for the review of this literature.

Adam *et al.* (2003) explore the effectiveness of two sub-regional trade agreements: the Central European Free Trade Area (CEFTA) and the Baltic Free Trade Area (BAFTA). They find that both agreements were effective in stimulating trade among the CEE countries, however, the BAFTA agreements turned out to be more effective than CEFTA. Moreover, the effects of the Europe Agreements were smaller than either BAFTA or CEFTA. In general, the authors conclude that all agreements were trade creators for their members.

In a more recent study De Benedictis *et al.* (2005) do not distinguish between BAFTA and CEFTA and use in their estimating equation only a single dummy variable for all regional trade agreements concluded among the CEE countries. They find that while sub-regional FTAs increased bilateral exports between the CEE countries the Europe Agreements had no impact on their exports to the EU. They explain this puzzling result by the fact that starting from the end of the 1980s trade between the CEE countries and EU-12 was already intense because the reduction of trade barriers had already taken place and there was not much left to liberalize in the 1990s.

Our study is related to the second strand in the empirical literature on the effects of trade liberalization in Central and Eastern Europe with several key differences. First, to study the effectiveness of particular trade agreements, a generalized gravity equation is used. Second, the potential effects of various bilateral trade agreements concluded by the CEE countries among themselves as well as with countries located outside the region are controlled in estimating equations. Third, in addition to the average estimates of the effects of preferential trade liberalization in CEE countries for the whole group, estimates for the particular countries in the region are presented.

Section 2 provides a brief overview of preferential trade liberalization in Central and Eastern Europe. Section 3 discusses the analytical framework used for evaluating the effects of preferential trade liberalization in the CEE countries together with the definitions of variables and the data

sources used in our empirical study. In Section 4 the estimation results are discussed. The final section summarizes and concludes with directions for future research.

## **II. Preferential Trade Liberalization in the CEE Countries**

This section discusses three different forms of preferential trade liberalization in CEE countries that include: i) trade liberalization with an already existing trade bloc such as the EU or EFTA, ii) the creation of a new sub-regional free trade area such as BAFTA or CEFTA, and iii) bilateral free trade agreements concluded by particular CEE countries among themselves as well as with other countries outside the region.

The ultimate goal of joining the EU has been the major factor shaping foreign trade policies in the CEE countries throughout the 1990s. The EU concluded the Europe Agreements with the majority of the CEE countries in the first half of the 1990s.

These agreements aimed at establishing a hub-and-spoke free trade area covering industrial products and granting some preferences to agricultural goods between the CEE countries and the EU over a maximum period of ten years. The trade components of the Europe Agreements overshadowed and extended the Generalized System of Preference status granted by the EU to most CEE countries in the early 1990s.<sup>3</sup> By January 1, 1997 the EU eliminated practically all tariffs on imports from the CEE countries with the exception of agricultural and “sensitive” products.

Although trade parts of the Europe Agreements with some CEE countries entered into force on different dates ranging from 1992 (former Czechoslovakia, Hungary and Poland) to 1997 (Slovenia), schedules of elimination of tariffs and non-tariff barriers on industrial products had one important element in common. They all had to be completed by the target date of January 1, 2002.

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<sup>3</sup> Unilateral trade liberalization with the CEE countries was initiated by the EU immediately after the fall of communism in Central and Eastern Europe. In 1990 the EU granted the Generalized System of Preference (GSP) status to Hungary and Poland, in 1991 to Bulgaria and former Czechoslovakia, and in 1992 to three former Soviet republics: Estonia, Latvia and Lithuania. Slovenia retained the preferential status for its exports into the EU under the so-called autonomous trade preferences granted to former Yugoslavia in the 1980 Cooperation Agreement. The GSP status significantly improved access of exporters from the CEE countries to the EU markets, especially for industrial products. GSP preferential rate embraced 63 percent of all CN tariff lines in EU imports with most of them subject to zero rates. However, at about the same time a list of “sensitive” products was created. In fact these products were produced by industries in which the comparative advantage of the CEE countries was the strongest.

However, the real liberalization of trade in agricultural goods between the EU and the CEE countries did not take place until two waves of enlargement of the EU to the East in 2004 and 2007 despite some previous efforts to liberalize trade in agricultural products that were limited to a small number of selected products. Only since then the CEE countries have been able to participate fully in the EU Single Market.

In addition to trade liberalization with the EU the CEE countries liberalized in the early 1990s their trade also with other Western European countries that were the members of the European Free Trade Association (EFTA) – another major trade bloc in Europe, although much smaller in size and much less integrated than the EU.<sup>4</sup> The bilateral free trade agreements between the CEE countries and the EFTA member states were patterned on the trade parts of the Europe Agreements as far as the scope and timing of trade liberalization are concerned.<sup>5</sup>

At about the same time when the Europe Agreements were signed the CEE countries started to liberalize trade also among themselves. Their efforts resulted in a matrix of sub-regional and bilateral agreements that were supposed to complement trade liberalization with Western Europe. The most important of these was the Central European Free Trade Area established by former Czechoslovakia, Hungary and Poland.

The CEFTA agreement was signed on December 21, 1992 and entered into force on March 1, 1993. The initial CEFTA agreement eliminated tariffs on approximately 40 percent of industrial goods. Trade in industrial goods and some agricultural products was liberalized further through a

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<sup>4</sup> In 1992 most EFTA countries signed an agreement with the EU establishing the European Economic Area (EEA) that entered into force in 1994. This agreement created a free trade area covering trade in industrial goods and most services as well as liberalized the movement of labour and capital between EFTA and the EU. Through the EEA agreement the EFTA countries can participate in the EU Single Market. The exception was Switzerland which concluded a separate bilateral agreement with the EU. In 1995 three EFTA countries: Austria, Finland and Sweden that jointly accounted for more than 50 percent of EFTA's output joined the EU. However, this EU enlargement did not change much the trade relations between the old and the new EU member states, except for trade in agricultural products, because trade in industrial products was liberalized earlier.

<sup>5</sup> These agreements covered mainly trade in industrial products as well as some marine and processed agricultural products. Similar to the EU Association Agreements also the EFTA agreements implied asymmetric trade liberalization. These agreements opened the EFTA markets to imports from the CEE countries faster than the CEE markets to EFTA products.

series of additional protocols, mostly signed in 1994 and 1995. By 1996 almost 80 percent of the CEFTA trade in industrial products were free of tariffs. By 1999 tariffs were abolished on almost all industrial products except a minor list of “sensitive” products. The CEFTA membership gradually expanded overtime to include Slovenia (1996), Romania (1997), Bulgaria (1999) and Croatia (2003).

The CEFTA agreement was initially supposed to include also three newly independent Baltic States: Estonia, Latvia and Lithuania that emerged from the former Soviet Union after its collapse in 1991. However, these three countries at about the same time when the CEFTA was created decided to establish their own Baltic Free Trade Area (BAFTA) whose scope and pace of trade liberalization were different from the CEFTA. The BAFTA agreement was signed on September 13, 1993 and entered in force on April 1, 1994.<sup>6</sup> Many BAFTA and CEFTA members signed bilateral trade agreements in subsequent years.

In addition to bilateral and sub-regional trade liberalization among the CEE countries these countries also participated in a number of bilateral preferential trade agreements concluded with other countries located both in the Middle East as well as in South-Eastern Europe.

Most agreements were signed by the CEFTA members with Israel and Turkey in the late 1990s and the early 2000s once these two countries concluded new Association Agreements with the EU.<sup>7</sup> In addition to that the Balkan members of the CEFTA concluded also a number of agreements with neighbouring Balkan countries: Albania and Macedonia. The Baltic states also concluded bilateral free trade agreements with Turkey, and Estonia also a separate preferential trade agreement with Ukraine.

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<sup>6</sup> In contrast to CEFTA, BAFTA did not increase its membership but the coverage of the agreement was increased over time at a faster pace than in the CEFTA member states. In particular, by January 1, 1997 BAFTA included not only industrial but also agricultural and fish products. In this way BAFTA became the first free trade area in the region that provided for completely liberalized trade in these economically sensitive areas. Significant differences in the pace and the coverage of trade liberalization between the BAFTA and the CEFTA member states did not allow creating a single free trade area that would embrace all the CEE countries before their accession to the EU.

<sup>7</sup> The new EU association agreement with Turkey established a customs union with the EU that entered into force in 1996.



### **III. The Analytical Framework and the Data Sources**

To study the impact of free trade agreements on bilateral exports and imports of the CEE countries a generalized gravity equation of bilateral trade flows is used. The gravity equation has often been utilized to evaluate effects of FTAs on trade flows. However, most previous studies use simple gravity equations derived from theoretical models that assume complete specialization in production. In our view, the estimates of the effects of FTAs obtained using such models may be biased due to the lack of controls for factor proportions that play a key role in the determination of trade flows in the incomplete specialization models. In particular, in the case of CEE countries, where agriculture still plays an important role in the economy, models assuming that all trade takes place in different varieties of manufactured products do not seem plausible. Therefore, our gravity model, besides the standard gravity-type variables (such as size of and distances between trading partners) and various controls includes the land-labor ratio ( $T/L$ ) to account for differences in factor endowments.

The dependent variables used in the estimations are bilateral exports and imports of ten CEE countries that joined the EU in the two subsequent waves of enlargement to the East. These include five Central European countries: the Czech Republic, Slovakia, Hungary, Poland and Slovenia, three Baltic states: Estonia, Latvia and Lithuania, and two South-Eastern European countries: Bulgaria and Romania.

Our main explanatory variables include dummy variables indicating the Europe Agreement as well as dummy variables indicating various intra-CEE bilateral trade and sub-regional trade agreements discussed in detail in Section 2 that were in force for the time span covered by our sample. In addition to this in our study we control also for potential effects of other preferential trading agreements concluded by the CEE countries. These include bilateral agreements concluded with the EFTA member states, the Mediterranean countries as well as the South Eastern European countries. Moreover, we also control for the potential effects of the EU enlargement in 2004 by

including two special dummy variables for trade between the old EU-15 and the new member states (NMS) as well as for trade among the new member states.

The trade flows data comes from the single source UN COMTRADE database and is expressed in the constant US dollars in 2000 prices. The sample covers 149 trading partners of the CEE countries in the period of 1993-2004.<sup>8</sup> The country size is measured using the data on trading partners' GDPs expressed in constant 2000 US dollars and evaluated in the PPP terms to assure their cross country comparability. The GDP and the land-labor ratios come from the World Bank's World Development Indicators 2006 (WDI).

The remaining control variables include proxies for transportation and transaction costs. Distance between trading partners is measured as simple geographic "as the crow flies" distance between their capital cities and is expressed in kilometers. We also control for the existence of a common border and common language between trading partners and colonial ties<sup>9</sup>. Control variables data comes from the CEPII database available online.

#### **IV. Empirical results**

In this section two sets of empirical results based on estimating equation (1) are presented that include the average estimates for the whole CEE sample as well as the estimates obtained separately for particular CEE countries.

The estimation results obtained for bilateral imports of the CEE countries using different estimation methods are in Table 1. The baseline estimates obtained using the fixed effects estimator

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<sup>8</sup> The sample choice was determined by data availability. The sample is limited downwards because of the political changes in Central and Eastern Europe related to the collapse of the Soviet Union and the break-up of Yugoslavia in 1992 and the 'velvet' divorce between the Czech and Slovak Republics that earlier constituted the Czech and Slovak Federal Republic. This yields a total of over 11 thousand observations in the case of exports and almost 10 thousand in the case of imports for the whole sample. The sample was limited to countries with population over 200 000 inhabitants.

<sup>9</sup> In our context a colonial relationship applies to the former parts of the Austro-Hungarian Empire or the Soviet Union.

for the whole sample including all the CEE countries with individual time effects for particular years are in column (1).<sup>10</sup>

The estimation results indicate that both the agreements with Western European countries: the Europe Agreements and the EFTA agreements, as well as sub-regional intra-CEE agreements: BAFTA, CEFTA and bilateral agreements concluded between the members of BAFTA and CEFTA were effective in stimulating imports of the Central and East European countries. Interestingly, the accession to the EU of the CEE countries did not seem to contribute to the increase in their imports. The evidence for bilateral agreements is not clear cut. While the agreement concluded with Turkey appear to have increased bilateral imports of the CEE countries the estimates for other agreements are either not statistically significant or display negative signs.

The robustness of the fixed effects estimates is subsequently investigated in columns (2)-(4) that display the estimation results obtained alternative estimation techniques. In column (2) we present estimation results obtained using the random effects estimator. In column (3) we control separately for fixed effects for the reporting and the partner countries instead of controlling for the common country-pair fixed effects. Finally, in column (4) potential endogeneity of trade agreements is controlled for using the Hausman-Taylor estimation technique. Unlike in specification (1), we obtain estimates for time-invariant controls that are roughly in-line with intuition<sup>11</sup>.

The estimation results obtained for the Europe Agreements are robust with respect to the estimation method. In all cases, estimation results demonstrate that the Europe Agreements significantly contributed to the increase in bilateral imports of the CEE countries from the EU member states.

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<sup>10</sup> The F-tests for time specific effects confirm the appropriateness of including time dummies for particular years of our sample in all estimated regressions for the whole CEE sample.

<sup>11</sup> The median dummy for the common colonizer variable is 2.878, which would indicate roughly 17-fold increase in trade due to effects due to colonial links. We have to keep in mind that many countries in our sample constituted the Soviet Union before 1989 and the trade linkages between them still remain strong (in particular, this applies to the case of Estonia, Latvia and Lithuania).

**Table 1. The panel data estimates for bilateral imports of the CEE countries**

VARIABLES	(1) FE	(2) RE	(3) 2FE	(4) HT
GDP Partner	1.80*** (0.098)	0.93*** (0.024)	1.72*** (0.15)	1.19*** (0.040)
GDP Reporter	1.28*** (0.12)	1.25*** (0.044)	1.44*** (0.17)	1.82*** (0.074)
T/L Partner	-0.58*** (0.14)	-0.086** (0.038)	-0.44*** (0.17)	-0.19*** (0.062)
T/L Reporter	-0.89*** (0.11)	-0.74*** (0.068)	-0.88*** (0.14)	-0.70*** (0.089)
Distance		-0.74*** (0.050)	-1.21*** (0.043)	-0.62*** (0.090)
Colonial relationship		0.43 (0.48)	-0.37*** (0.091)	0.38 (0.87)
Common colonizer		2.88*** (0.26)	1.32*** (0.097)	4.30*** (0.46)
Contiguity		1.28*** (0.26)	0.46*** (0.054)	1.36*** (0.46)
Common language		0.77* (0.46)	0.49*** (0.094)	1.38* (0.82)
NMS-EU15 Integration	0.15 (0.094)	0.30*** (0.094)	0.15** (0.066)	0.14 (0.091)
Intra NMS Integration	-0.48*** (0.16)	-0.39** (0.16)	-0.35*** (0.095)	-0.46*** (0.15)
Association Agreement	0.66*** (0.069)	0.83*** (0.065)	0.49*** (0.066)	0.71*** (0.068)
FTA EFTA	0.85*** (0.12)	0.88*** (0.12)	0.46*** (0.14)	0.83*** (0.12)
CEFTA	0.39*** (0.10)	0.61*** (0.098)	0.073 (0.061)	0.42*** (0.100)
BAFTA	0.97* (0.52)	1.09*** (0.41)	2.34*** (0.14)	1.08** (0.51)
FTA with Turkey	0.76*** (0.18)	0.94*** (0.18)	0.75*** (0.12)	0.83*** (0.18)
FTA with Israel	-0.14 (0.22)	0.13 (0.22)	-0.22* (0.11)	-0.058 (0.22)
FTA with Croatia	-0.66 (0.77)	-0.68 (0.78)	-0.71*** (0.11)	-0.71 (0.75)
Baltics/CEFTA FTA	0.21* (0.11)	0.58*** (0.10)	0.51*** (0.066)	0.31*** (0.11)
FTA with Albania	0.33 (0.63)	0.48 (0.64)	-0.69 (0.59)	0.44 (0.62)
FTA with Macedonia	-1.41*** (0.39)	-1.01*** (0.39)	1.11** (0.45)	-1.40*** (0.38)
FTA with Ukraine	0.53 (1.05)	0.75 (0.88)	-0.13 (0.18)	0.36 (1.03)
Constant	-67.7*** (2.38)	-38.8*** (1.21)	-61.2*** (3.17)	-60.0*** (2.12)
Observations	9950	9950	9950	9950
R-squared	0.37	0.62	0.80	
FE F-stat.	19.6***			
Sargan-Hansen		407		127

Standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

The empirical evidence obtained for intra-CEE trade agreements is also fairly robust. While the country-pair fixed effects estimates suggest that all agreements concluded by the CEE countries significantly increased their bilateral imports, the CEFTA variable loses its previous statistical

significance when the double-fixed effects are used. Also, the estimation results obtained for the agreements with other countries turned out to be robust with respect to the choice of the estimation method. The Sargan-Hansen test favors, however, the fixed effects estimation method.

The corresponding estimation results for bilateral exports of the CEE countries obtained using different estimation techniques are in Table 2. Similar to the case of imports the fixed effects estimates suggest that both the Europe Agreements and the EFTA agreements as well as intra-CEE sub-regional and bilateral trade agreements concluded between the BAFTA and the CEFTA members contributed significantly to the development of exports in the Central and Eastern European countries. Interestingly, unlike in the case of imports, the accession of the CEE countries to the European Union contributed to the increase in their exports to the old but not the new EU member countries. Other trade agreements were not statistically significant except for those concluded with Turkey. Similar to the estimation results obtained previously for bilateral imports, the results obtained for both the Europe Agreements and the intra-CEE agreements remain robust with respect to the choice of the estimation method. As in the case of imports, the country-pair fixed effects remains the preferred estimation method.

It is worth noting that the estimated parameters obtained for the intra-CEE agreements were always higher than those for the Europe Agreements. Moreover, the coefficients obtained for the BAFTA were always much higher than those for the CEFTA which can be explained by the faster and the bigger scope of trade liberalization in the Baltic states than among the Central European countries that did not liberalize trade in agricultural products completely until their entry into the EU in 2004.

To see what actually drives our empirical results for the whole sample our sample was disaggregated into sub-samples for particular CEE countries and the gravity equations for their bilateral exports and imports were estimated separately for each country using the fixed effects

estimator. The estimation results for bilateral imports of the individual CEE countries are in Table 3 while bilateral exports are in Table 4 (both tables are placed in Appendix).

**Table 2. The panel data estimates for bilateral exports of the CEE countries**

VARIABLES	(1) FE	(2) RE	(3) 2FE	(4) HT
GDP Partner	0.76*** (0.089)	0.71*** (0.020)	0.74*** (0.15)	0.82*** (0.025)
GDP Reporter	1.98*** (0.11)	1.23*** (0.037)	1.98*** (0.17)	1.68*** (0.057)
T/L Partner	0.25** (0.12)	0.023 (0.031)	0.34** (0.14)	0.042 (0.038)
T/L Reporter	0.14 (0.10)	-0.26*** (0.060)	0.23 (0.15)	-0.067 (0.070)
Distance		-1.15*** (0.044)	-1.78*** (0.041)	-0.99*** (0.057)
Colonial relationship		0.52 (0.42)	0.049 (0.093)	0.65 (0.53)
Common colonizer		2.21*** (0.22)	1.89*** (0.089)	2.88*** (0.28)
Contiguity		0.67*** (0.22)	0.13** (0.052)	0.75*** (0.28)
Common language		0.58 (0.40)	0.24*** (0.090)	0.86* (0.50)
NMS-EU15 Integration	0.40*** (0.092)	0.53*** (0.091)	0.48*** (0.079)	0.43*** (0.090)
Intra NMS Integration	-0.015 (0.15)	0.046 (0.15)	0.24** (0.11)	-0.0072 (0.15)
Association Agreement	0.44*** (0.068)	0.48*** (0.061)	0.23*** (0.065)	0.44*** (0.066)
FTA EFTA	0.58*** (0.12)	0.52*** (0.11)	0.070 (0.16)	0.59*** (0.12)
CEFTA	0.46*** (0.100)	0.55*** (0.094)	0.62*** (0.063)	0.48*** (0.099)
BAFTA	1.70*** (0.51)	1.13*** (0.38)	1.18*** (0.14)	1.61*** (0.51)
FTA with Turkey	0.49*** (0.18)	0.51*** (0.17)	0.49*** (0.17)	0.49*** (0.17)
FTA with Israel	0.071 (0.22)	0.16 (0.21)	0.15 (0.12)	0.077 (0.22)
FTA with Croatia	0.61 (0.75)	0.65 (0.75)	0.35** (0.17)	0.67 (0.75)
Baltics/CEFTA FTA	0.42*** (0.10)	0.51*** (0.099)	0.89*** (0.080)	0.42*** (0.10)
FTA with Albania	-0.15 (0.62)	0.085 (0.62)	0.66*** (0.14)	-0.12 (0.62)
FTA with Macedonia	-0.16 (0.38)	0.22 (0.37)	1.40*** (0.41)	-0.14 (0.38)
FTA with Ukraine	-0.038 (1.03)	0.74 (0.82)	0.27 (0.19)	0.052 (1.02)
Constant	-56.3*** (2.16)	-29.2*** (1.02)	-41.7*** (2.62)	-43.4*** (1.68)
Observations	11017	11017	11017	11017
R-squared	0.4	0.69	0.80	
Fixed effects F-stat.	14.0***			
Sargan-Hansen		120***		16.1***

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

The Europe Agreements were found to increase significantly imports of all the Baltic countries: Estonia, Latvia, and Lithuania together with Romania and Bulgaria. The same result applies also to the EFTA agreements in the case of the Baltics. Interestingly, the accession to the European Union resulted in increased imports of Hungary and Slovenia only. The estimates obtained for the intra-CEE agreements were not statistically significant for most countries. In particular, the CEFTA agreement turned out to be statistically significant for only Poland, Romania, and Bulgaria while the BAFTA agreement was not significant at all. Moreover, of all the bilateral agreements concluded between the BAFTA and the CEFTA member states only the agreements concluded by Slovenia were statistically significant. The estimation results obtained for other bilateral agreements were statistically significant only for Estonia, Hungary, Latvia, and Poland and only in the case of the agreement with Turkey.

The estimation results obtained for bilateral exports of the particular CEE countries are in columns (1)-(10). Similar to the results obtained for imports, it was found that the Europe Agreements were effective only in stimulating exports of the Baltic states: Estonia and Lithuania as well as Romania and Bulgaria. The results obtained for trade agreements concluded with the EFTA member countries show statistical significance for Latvia, Lithuania, and Slovenia. The CEFTA agreement contributed to the expansion of exports in six member countries: Bulgaria, the Czech Republic, Hungary, Slovenia, Poland and Romania. The BAFTA agreement was statistically significant only for Estonia. The bilateral agreements between particular BAFTA and CEFTA countries were statistically significant for the Czech Republic, Poland, and Slovenia. The results obtained for bilateral agreements with other countries were positive and statistically significant only in the case of the agreement concluded between Poland and Turkey.

## **V. Concluding remarks**

Trade liberalization in the CEE countries has been effective. Institutionalized trade liberalization on average has been more effective in stimulating trade than bilateral free trade agreements. In

particular, trade liberalization with the EU in the form of the Europe Agreements is on average effective in raising both bilateral imports and bilateral exports of the CEE countries to the EU. Moreover, estimates for bilateral imports are higher than for bilateral exports. This result can be explained by the initially higher trade barriers in the CEE countries compared to the EU states.

At the same time, our results show significant heterogeneity among the CEE countries with respect to the timing and the scope of trade liberalization. Estimation results for particular CEE countries demonstrate that the positive effect of the Europe Agreements was driven by trade with Bulgaria, Romania, and the Baltic states. The lack of impact of the Europe Agreements on trade flows of Central European countries can be explained by the fact that these countries had been enjoying a preferential access to the EU markets since the early 1990s. Our results show that small countries are likely to expand trade through liberalization towards larger trade partners. The EU-15 trading block was a natural trading partner for the CEE countries after the reorientation of trade towards the West.

Finally, entry of the CEE countries into the EU provided a new stimulus for trade expansion between the old and the new member states. However, due to the data constraints our empirical evidence is limited to the effects of first Eastern Enlargement in 2004. Trade effects of the EU enlargement to the East, especially those of the second enlargement in 2007, deserve closer attention in future studies. Another topic for future research is the trade effects of the European Monetary Union enlargement to the East.



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## Appendix: Remaining tables

**Table 3. The fixed effects estimates for bilateral imports of particular CEE countries**

VARIABLES	(1) Bulgaria	(2) Czech Republic	(3) Estonia	(4) Hungary	(5) Latvia	(6) Lithuania	(7) Poland	(8) Romania	(9) Slovak Republic	(10) Slovenia
GDP Partner	0.79** (0.34)	1.54*** (0.25)	3.25*** (0.50)	2.11*** (0.27)	2.49*** (0.44)	4.38*** (0.47)	0.75*** (0.24)	1.55*** (0.30)	2.11*** (0.30)	0.81*** (0.29)
GDP Reporter	1.87*** (0.55)	4.36*** (0.71)	2.24*** (0.52)	1.09*** (0.37)	0.72** (0.34)	-1.07* (0.55)	1.52*** (0.28)	3.54*** (0.68)	2.22*** (0.43)	-0.030 (0.52)
T/L Partner	-0.80 (0.50)	0.33 (0.33)	-2.01*** (0.52)	-0.27 (0.37)	-0.18 (0.45)	-2.43*** (0.66)	-0.046 (0.28)	-0.32 (0.39)	0.65* (0.35)	-1.64*** (0.43)
T/L Reporter	0.11 (0.76)	-3.80 (5.42)	0.96** (0.41)	3.06 (2.00)	-0.51** (0.25)	-1.20*** (0.28)	-2.86*** (0.98)	-4.02 (3.49)	-0.16 (1.13)	-2.55*** (0.98)
NMS-EU15 Integration		-0.12 (0.20)	-0.044 (0.28)	0.42** (0.21)	0.26 (0.25)	0.019 (0.38)	0.22 (0.21)		0.19 (0.19)	0.53** (0.25)
Intra NMS Integration		-0.39 (0.49)	-0.92** (0.45)	0.17 (0.43)	-0.66 (0.41)	-1.35** (0.62)	0.049 (0.41)		-0.39 (0.51)	0.43 (0.43)
Association Agreement	0.42* (0.23)	0.27 (0.39)	0.93*** (0.19)	0.33 (0.30)	0.96*** (0.18)	1.12*** (0.26)	0.37 (0.26)	0.53** (0.24)	0.51 (0.43)	0.068 (0.16)
FTA EFTA	0.17 (0.49)	0.51 (0.51)	1.39*** (0.36)	0.33 (0.36)	1.50*** (0.33)	1.85*** (0.49)	0.35 (0.30)	0.073 (0)	0.70 (0)	0.45 (0.43)
CEFTA	0.66** (0.28)	0.12 (0.24)		0.29 (0.24)			0.52** (0.24)		-1.29** (0.54)	0.33 (0.23)
BAFTA			1.00 (1.07)		1.03 (0.94)	-0.12 (1.07)				
FTA with Turkey	0.76 (0.68)	0.33 (0.42)	1.12* (0.57)	0.76* (0.44)	1.15** (0.55)	1.17 (0.79)	0.91** (0.45)	-94.9*** (8.33)	-18.9** (8.93)	0.57 (0.52)
FTA with Israel	-0.11 (0.81)	-0.25 (0.44)		-0.18 (0.44)			0.13 (0.44)	-0.11 (0.64)	-0.25 (0.43)	0.073 (0.51)
FTA with Croatia							-0.79 (0.62)			
Baltics/CEFTA FTA	0.041 (0.55)	0.19 (0.26)	0.16 (0.26)	0.34 (0.28)	0.35 (0.24)	-0.081 (0.37)	0.15 (0.27)		0.026 (0.27)	0.94** (0.41)
FTA with Albania	0.91 (0.97)							-0.45 (1.11)		
FTA with Macedonia	-1.24* (0.74)							-1.79 (1.11)		-1.29** (0.54)
FTA with Ukraine			0.56 (1.08)							
Constant	-55.7*** (13.1)	-139*** (10.7)	-126*** (11.0)	-67.0*** (5.69)	-71.1*** (6.72)	-80.1*** (12.6)	-49.8*** (6.02)	-119*** (21.4)	-94.9*** (8.33)	-18.9** (8.93)
Observations	1115	994	896	1019	838	969	1185	1147	824	963
R-squared	0.080	0.385	0.456	0.304	0.400	0.331	0.302	0.179	0.419	0.191
FE F-stat.	13.4	20.8	13.4	42.1	14.7	6.72	23.5	18.4	28.6	23.1

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 4. The fixed effects estimates for bilateral exports of particular CEE countries**

VARIABLES	(1) Bulgaria	(2) Czech Republic	(3) Estonia	(4) Hungary	(5) Latvia	(6) Lithuania	(7) Poland	(8) Romania	(9) Slovak Republic	(10) Slovenia
GDP Partner	-0.17 (0.28)	0.90*** (0.18)	2.09*** (0.50)	1.04*** (0.20)	1.85*** (0.55)	1.30*** (0.38)	0.40** (0.19)	0.99*** (0.25)	0.82** (0.40)	0.050 (0.22)
GDP Reporter	2.56*** (0.43)	2.91*** (0.50)	2.92*** (0.61)	2.49*** (0.28)	1.01** (0.43)	0.80* (0.47)	0.99*** (0.23)	4.74*** (0.60)	1.03* (0.58)	2.96*** (0.35)
T/L Partner	-0.51 (0.36)	0.59*** (0.21)	-0.94 (0.62)	0.50** (0.22)	-0.27 (0.57)	-0.87 (0.55)	0.28 (0.25)	0.71** (0.34)	1.09*** (0.41)	0.79*** (0.23)
T/L Reporter	2.91*** (0.60)	0.52 (3.80)	1.46*** (0.50)	2.60* (1.43)	0.49 (0.35)	-0.33 (0.24)	-3.54*** (0.83)	-10.5*** (3.12)	-2.16 (1.49)	1.29** (0.63)
NMS-EU15 Integration		0.44*** (0.14)	-0.062 (0.34)	0.51*** (0.16)	0.47 (0.38)	0.53 (0.33)	0.48*** (0.18)		0.78*** (0.27)	0.18 (0.17)
Intra NMS Integration		0.15 (0.36)	-0.24 (0.56)	0.33 (0.32)	-0.018 (0.64)	-0.40 (0.54)	0.50 (0.35)		0.20 (0.73)	0.48* (0.27)
Association Agreement	0.69*** (0.19)	0.082 (0.29)	0.58** (0.24)	0.049 (0.22)	0.21 (0.28)	0.78*** (0.22)	0.10 (0.22)	0.78*** (0.22)	0.31 (0.61)	-0.13 (0.11)
FTA EFTA	0.43 (0.40)	-0.26 (0.37)	0.68 (0.47)	-0.11 (0.24)	1.21** (0.50)	2.06*** (0.43)	0.32 (0.25)	0.19 (0.41)	-0.29 (0.75)	0.46** (0.24)
CEFTA	0.51** (0.23)	0.37** (0.17)		0.32* (0.18)			0.99*** (0.21)	0.91*** (0.24)	0.49 (0.35)	0.28* (0.15)
BAFTA			2.26* (1.34)		1.29 (1.49)	1.17 (0.92)				
FTA with Turkey	0.57 (0.56)	0.37 (0.31)	-0.21 (0.72)	0.36 (0.33)	0.65 (0.81)	1.01 (0.68)	0.93** (0.39)	0.65 (0.57)	0.52 (0.58)	0.17 (0.35)
FTA with Israel	0.58 (0.66)	-0.076 (0.33)		-0.15 (0.33)			0.57 (0.38)	0.17 (0.62)	-0.30 (0.61)	0.37 (0.34)
FTA with Croatia							0.38 (0.53)			
Baltics/CEFTA FTA	-0.26 (0.45)	0.73*** (0.19)	0.15 (0.33)	0.12 (0.21)	0.34 (0.38)	0.074 (0.32)	1.15*** (0.23)		0.19 (0.39)	1.63*** (0.22)
FTA with Albania	-0.12 (0.80)							0.083 (1.06)		
FTA with Macedonia	-0.15 (0.61)							1.71 (1.07)		-0.60* (0.36)
FTA with Ukraine			-0.083 (1.35)							
Constant	-45.2*** (10.1)	-82.1*** (7.38)	-110*** (12.6)	-73.9*** (3.83)	-61.4*** (8.98)	-44.4*** (10.4)	-27.9*** (5.04)	-138*** (18.8)	-36.4*** (10.9)	-57.5*** (5.60)
Observations	1217	1096	966	1119	1040	997	1216	1370	967	1029
R-squared	0.058	0.339	0.250	0.420	0.113	0.182	0.304	0.136	0.134	0.327
FE F-stat.	9.07	20.8	8.28	18.4	7.34	10.7	19.0	10.8	8.22	19.8

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1



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